FCC Statement
This device compiles with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) This device may not cause harmful interference
(2) This device must accept any interference received, including interference that may cause undesired operation.

Warning! This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

CE-Mark Warning

In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

All Trademarks and trade names are the properties of their respective owners.

Copyright © 2003, All right Reserved.

Document Version: 2.0

1. Introduction

Thanks for the purchasing of your new Gigabit Ethernet PCI adapter. This document describes the Installation of network adapter. This adapter supports 10BASE-T, 100BASE-TX and 1000BASE-T Ethernet copper interface. Moreover, the PCI interface on the Gigabit Ethernet NIC complies with PCI Local Bus, is compatible with 32-bit PCI bus. As a bus master, the NIC requests access to the PCI bus, instead of waiting to be polled.

1.1 Features

The Gigabit Ethernet PCI adapter is a cost effective, high-performance network interface card. It operates in 10BASE-T, 100BASE-TX and 1000BASE-T modes and integrates easily with Fast Ethernet hub and Gigabit hub and switch.

- Complies with IEEE 802.3 10BASE-T standard
- Complies with IEEE 802.3u 100BASE-TX standard
- Complies with IEEE 802.3ab 1000BASE-T standard
- Complies with PCI specifications
- Supports 32 bit bus master for high throughput and low CPU utilization
- Supports both half and full duplex operation
- Supports 10/100/1000Mbps auto-sensing capability
- Supports Wake-On-LAN (depend on model and user's motherboard function)
- Rich diagnostic LED mounted on bracket for easily viewing and troubleshooting

LED	Function
10M Link/Act	Green/Blinking Green
100M Link/Act	Green/Blinking Green
1000M Link/Act	Green/Blinking Green

- Plug and Play Installation.
- Network drivers on the diskette for Windows 98SE, NT4.0, 2000, XP, ME, Netware 4/5/6.X, and Linux driver.
- FCC, CE class B certification

1.2 System Requirements

To use the adapter, you need the following components:

- One 32 or 64 bit PCI master mode expansion slot that is compliant with PCI bus specifications
- One 3.5-inch, 1.44MB diskette drive
- The following cables:

Port Type	Media	Max. Distance
10BASE-T	Cat. 3, 4, or 5 UTP	100 meter
100/1000BASE-T	Cat. 5 or 5e UTP	100 meter

NOTE: 1000BASE-T signaling requires four twisted pairs of Category 5 balanced cabling, as specified in ISO/IEC 11801:1995 and ANSI/EIA/TIA-568-A (1995) and tested for additional performance using testing procedures defined in TIA/EIA TSB95

2. Unpack and Inspect

Caution:
Under ordinary circumstances, this adapter card will not be affected by static charge as may be received through your body during handling of the unit .In special circumstances where you may carry an extraordinarily high static charge, it had better reduce the charge by touching a ground before handling the adapter card.

Open the shipping gift box and carefully remove all items.
Please check the following items:

- One Gigabit Ethernet PCI Adapter
- One 3.5” drivers diskette
- This user’s Manual

Note:
If any of the listed items are missing, please contact your distributor or reseller

3. Install the Adapter

1. Turn off the computer.
2. Remove the computer's cover, in accordance to its manual.
3. Insert the contact edge of the adapter card into the connector of any available PCI Bus master expansion slot. Press the card firmly into the connector to PCI slot. Please make sure that the card's contacts are fully seated in the PCI slot.
4. Install the bracket screw that secures the card to the Computer chassis.
5. Replace the computer's cover.
6. Connect the CAT3 or CAT5 UTP cable to the RJ-45 network connector.
7. Remove driver diskette from the PC diskette drive.
8. Turn on the computer.
9. If the BIOS section of your computer's boot program is Plug and Play compliant, then at power up the BIOS will configure any newly installed adapter automatically.

Note:

Due to some Plug-n-Play BIOS programs' problem, it happens occasionally that a newly installed adapter is assigned an interrupt number that is already used by another device adapter. In such a case, the conflict of interrupt number will cause faults in the behavior of both devices. Then it is necessary to run the CMOS Setup utility, and manually assign a non-conflict Interrupt Number.

4. Driver Diskette

The divers diskette contains all the popular operating system drivers.

- Windows 98SE/ME/NT4.0/2000/XP
- Linux
- Netware 4/5/6.X

5. Software Installation

Microsoft Windows 98SE

1. Plug the adapter into the PCI slot.
2. Press the power button on the case of PC to turn it on
3. Windows 98 will prompt "PCI Ethernet Controller" in "Add New Hardware Wizard" dialog box, click <NEXT> button.
4. Select "Search for the best driver for your device" from "Add New Hardware Wizard" dialog box, then click <NEXT> button.
5. Insert driver disk bundled with "Gigabit Ethernet Network Adapter".
6. Enter the driver pathname “A:\”, then click the <NEXT> button from "Add New Hardware Wizard" dialog box.
7. Select your installed adapter - "Gigabit Ethernet Network Adapter", then click the <NEXT> button from the dialog box.
8. To complete the process, please follow the instructions on the screen.
9. Restart your computer.

Microsoft Windows ME

1. Plug the adapter into the PCI slot.
2. Press the power button on the case of PC to turn it on.
3. Windows ME will prompt "PCI Ethernet Controller" in "Add New Hardware Wizard" dialog box; insert driver disk bundled with "Gigabit Ethernet Network Adapter".
4. Select "Install the software automatically" and then click <NEXT> button.
5. Windows ME will prompt "Gigabit Ethernet Network Adapter" in "Add New Hardware Wizard" dialog box, click <FINISH> button to complete the installation.
6. Restart the computer.

Microsoft Windows NT 4.0

1. In the "My Computers" icon, double click the "Control Panel" icon.
2. In the "Control Panel" icon group, double click the "Network" icon.
3. In the "Network Settings" dialog box, select the Adapter" Tab, then click "Add" button. There will be a list of network adapters.

4. Click "Have Disk" for selecting one network adapter.
5. Insert this driver disk in drive A, enter drive and pathname “A:\Winnt4”, then click the <OK> button.
6. You will see that the "Gigabit Ethernet Network Adapter " string appears in the "Select OEM Option" dialog box, and click the <OK> button.
7. Select the connection type in the "Gigabit Ethernet Network Adapter", and click <OK>.
8. Follow the screen instructions and finish the rest of installation procedures.
9. Restart your computer.

Microsoft Windows 2000

1. Plug the adapter into the PCI slot.
2. Press the power button on the case of PC to turn it on.
3. Windows 2000 will prompt "Welcome to the Found New Hardware Wizard" in "Found New Hardware Wizard" dialog box, click <NEXT> button.
4. Windows 2000 will prompt "Ethernet Controller" in "Found New Hardware Wizard" dialog box, select "Search for a suitable driver for my device" and then click <NEXT> button.
5. Select "Specify a location" from "Optional search locations:" of "Found New Hardware Wizard" dialog box, then click <NEXT> button.
6. Insert driver disk bundled with "Gigabit Ethernet Network Adapter".
7. Enter the driver pathname "A:\" then click the <OK> button from "Found New Hardware Wizard" dialog box.
8. Windows 2000 will display "The wizard found a driver for the following device Ethernet Controller" in "Found New Hardware Wizard" dialog box, click <NEXT> button.
9. Windows 2000 will display "Completing the Found New Hardware Wizard Gigabit Ethernet Network Adapter Windows has finished installing the software for this device" in "Found New Hardware Wizard" dialog box, click <Finish> to complete the installation.

Microsoft Windows XP

1. Plug the adapter into the PCI slot.
2. Press the power button on the case of PC to turn it on
3. Windows XP will prompt "Ethernet Controller" in "Found New Hardware Wizard" dialog box; insert driver disk bundled with "Gigabit Ethernet Network Adapter ".
4. Select "Install the software automatically" and then click

<NEXT> button.

5. Windows XP will prompt "Gigabit Ethernet Network Adapter " in "Hardware Installation" dialog box, click <Continue Anyway> button.
6. Windows XP will display "The wizard has finished installing the software for Gigabit Ethernet Network Adapter/Fiber Gigabit Ethernet Network Adapter" in "Found New Hardware Wizard" dialog box, click <Finish> to complete the installation.

Linux kernel 2.2.x.

1. Compiling rtl8169.c
   "gcc -DMODULE -Wall -Wstrict-prototypes -O6 -c rtl8169.c".
2. Move the object code rtl8169.o to the directory
   "/lib/modules/2.2.14-5.0/net".
   "cp rtl8169.o /lib/modules/2.2.14-5.0/net"
3. Insert module to kernel.
   "insmod rtl8169"
4. Check driver status
   "dmesg"
5. The media can be forced to one of the 5 modes as follows.
   The link speed and duplex mode can be forced in 5 modes.
   Command:"insmod rtl8169 media = SET_MEDIA"

Ex: "insmod rtl8169 media=0x04" will force link mode to be 100Mpbs Half-duplex.

SET_MEDIA can be:
   _10_Half = 0x01
   _10_Full = 0x02
   _100_Half = 0x04
   _100_Full = 0x08
   _1000_Full = 0x10

Linux kernel 2.4.x.

1. Compiling r8169.c using 'Makefile'.
   "make"

<NOTE>Please remember to ASSIGN "NEW_INCLUDE_PATH" in Makefile according to linux kernel.

2. Move r8169.o to the directory
   "/lib/modules/<kernel>/kernel/drivers/net".

"cp r8169.o /lib/modules/<kernel>/kernel/drivers/net"
where <kernel> represents the kernel version, say 2.4.18-3 in Red Hat 7.3

3. Insert module by
   "insmod r8169"
4. Check driver status
   "dmesg"
5. The media can be forced to one of the 5 modes as follows.
   Cmd: "insmod r8169 media = SET_MEDIA"

For example:
"insmod r8169 media = 0x04" will force PHY to operate in 100Mpbs Half-duplex.

SET_MEDIA can be:
_10_Half= 0x01
_10_Full = 0x02
_100_Half= 0x04
_100_Full= 0x08
_1000_Full= 0x10

Novell Netware System (4.X)

1. Update Netware Server to 4.2 .
   (If don't update to 4.2, use diskette update file "MSM.NLM, ETHERTSM.NLM")
2. Run NetWare Server System.
3. When the Server prompt appears, load the NetWare Server Installation Utility ==> "LOAD INSTALL"
4. Select "Driver options" from the "Installation Options" menu.
5. Select "Configure network drivers" from the "Driver Options" menu.
6. Select "Select a driver" from the "Additional Driver Actions" menu
7. Press <Ins> to install an unlisted driver, and then press <F3> to specify a different path.
8. Insert Driver Diskette in your PC's floppy drive and specify the path A:\NWServer\
9. Select "Gigabit Ethernet Network Adapter" from the "Select a driver to install:" menu.
10. If necessary, select "Select/Modify driver parameters and protocols" menu.
11. Follow instructions to complete driver installation.

Novell Netware System (5.X/6.X)

1. Run NetWare Server System.
2. When the Server prompt appears, load the NetWare Server Installation Utility ==> "LOAD NWCONFIG"
3. Select "Driver options" from the "Installation Options" menu.
4. Select "Configure network drivers" from the "Driver Options" menu.
5. Select "Select a driver" from the "Additional Driver Actions" menu.
6. Press <Ins> to install an unlisted driver, and then press <F3> to specify a different path.
7. Insert Driver Diskette in your PC's floppy drive and specify the path A:\NWServer\
8. Select "Gigabit Ethernet Network Adapter" from the "Select a driver to install:" menu.
9. If necessary, select "Select/Modify driver parameters and protocols" menu.
10. Follow instructions to complete driver installation.